AMENDED CLAIMS

1. A method for detecting an abnormality of a heat exchanger (3, 5) exchanging heat between a first fluid flow (7) flowing in a conduit (6) and a second fluid flow (8) flowing along a flow path (9), said conduit (6) and said flow path (9) each having an inlet and an outlet, said method comprising the steps of:

establishing at least one parameter representative of the temperature conditions of the heat exchanger (3, 5),

establishing a second fluid inlet temperature,

establishing a parameter indicative of expected heat exchange between the heat exchanger and the second fluid,

establishing an estimated second fluid outlet temperature, and

employing the second estimated fluid outlet temperature for evaluating the heat exchange between the first and second fluids by comparing the estimated second fluid outlet temperature, or a parameter derived therefrom, with a reference value,

characterised in that the estimated second fluid outlet temperature is established from at least one parameter representative of the temperature conditions of the heat exchanger, the second fluid inlet temperature and the parameter being indicative of an expected heat exchange.

9. A heat exchanger abnormality detection device for a heat exchanger (3, 5) exchanging heat between a first fluid (7) in a conduit (6) and a second fluid (8) in a flow path (9), the device comprising a first estimator estimating at least one

parameter representative of the temperature conditions of the heat exchanger, a first intermediate memory means storing the at least one parameter representative of the temperature conditions of the heat exchanger, a temperature sensor measuring the second fluid inlet temperature, a second intermediate memory means storing the second fluid inlet temperature, a second estimator establishing a parameter indicative of expected heat exchange between the heat exchanger (3, 5) and the second fluid (8), a third intermediate memory means storing the parameter indicative of expected heat exchange, a processor establishing an estimated second fluid outlet temperature, and a comparator comparing the estimated second fluid outlet temperature, or a parameter established on basis thereof, with a reference value, **characterised** in that the estimated second fluid outlet temperature is based on said at least one parameter representative of the temperature conditions of the heat exchanger, said second fluid inlet temperature, from the first and second intermediate memory means, respectively, and the parameter indicative of expected heat exchange from the third intermediate memory means